US Army Corps
of Engineers
Seattle District

Public Notice of Application for Permit

Regulatory Branch
Post Office Box 3755
Seattle, Washington 98124-3755
Telephone (206) 764-3495
ATTN: Olivia Romano, Project Manager

Public Notice Date: March 17, 2006
Expiration Date: April 17, 2006
Reference: 200600181
Name: Northwest Pipeline Corporation

Interested parties are hereby notified that an application has been received for a Department of the Army permit in accordance with Section 404 of the Clean Water Act for certain work described below and shown on the enclosed drawings.

APPLICANT: Northwest Pipeline Corporation
295 Chipeta Way
Salt Lake City, Utah 84108
ATTN: Serge Theroux
Telephone: (801) 584-6766

AGENT: Golder Associates, Inc.
44 Union Blvd., Suite 300
Lakewood, CO 80228
ATTN: Carolyn Last
Telephone: (303) 980-0540

LOCATION: In Swift Creek, near Nooksack, in Whatcom County, Washington. The project site is located adjacent to and west of the existing pipeline right-of-way.

WORK: Excavation and fill to construct two grade control structures and three rock weirs below the ordinary high water line of Swift Creek. The proposed grade control structures and rock weirs will cover an area about 150 feet long and 110 feet wide or 0.35 of acre. The proposed work would consist of the excavation of up to 8,300 cubic yard of native material and the placement of up to 3,200 cubic yards of riprap for the two structures, (1,717 cubic yards for Structure A and 1,422 cubic yards for Structure B), the rock weirs, and the backfill of up to 5,100 cubic yards of native material. A temporary stream by-pass channel will be about 860 feet long and will be excavated beginning at a point east of the pipelines and proceed as close to the north bank as the stream bed allows. The actual location of the starting point of the by-pass channel will be determined based on the conditions of the active stream channel within the streambed at the time of construction. Up to 127 cubic yards of native material will be excavate from the by-pass channel and placed adjacent to the by-pass channel within a dry portion of the streambed. Sandbags will be used to divert the water from the main active channel to the by-pass channel and to prevent backflow into the active channel below the construction area. The by-pass channel will be about 2 feet wide and 2 feet deep. Once the project is complete the by-pass channel will be backfilled with native material. A mat-bridge will be placed across the by-pass channel for equipment access.

PURPOSE: To protect the existing 26-inch and 30-inch natural gas pipeline and the proposed 36-inch natural gas pipeline (Capacity Replacement Project, 200400304) from head-cut erosion occurring within Swift Creek.

ADDITIONAL INFORMATION: In November 2005 the existing 26-inch pipeline was exposed as a result of the head-cut erosion occurring within Swift Creek. Northwest placed riprap to prevent the head-cut erosion from undermining the pipeline until a long term protection plan could be developed by Northwest. The proposed work will stop the head-cut erosion and provide long term protection to the existing and proposed pipelines. The proposed work will be done in accordance with Federal Regulatory Energy Commission's Wetland and Waterbody Construction and Mitigation Procedures and Upland Erosion Control, Revegetation and Maintenance Plan. Northwest has developed and will implement a Spill Prevention, Containment and Countermeasure plan for Oil and Hazardous Substance for Pipeline Maintenance Project and Stormwater Pollution Prevention Plan for Maintenance Activities. These plans and procedures will reduce impacts to Swift Creek and the riparian area.

ENDANGERED SPECIES: The Endangered Species Act (ESA) of 1973, as amended, requires assessment of potential impacts to listed and proposed species. The bald eagle (*Haliaeetus leucocephalus*) listed threatened, Marbled murrelet (*Brachyramphus marmoratus*), listed threatened, and Northern spotted owl (*Strix occidentalis*) listed threatened may occur in the project area. Puget Sound/Coastal bull trout (Salvelinus confluentus) listed threatened may occur downstream in the Fraser River/Sumas River confluence. There is no critical habitat listed or proposed for listing in the project vicinity. After receipt of comments from this public notice, the U.S. Army Corps of Engineers (Corps) will evaluate the potential impacts to these species. A preliminary determination indicates that the activity will not affect endangered or threatened species, or their critical habitat, designated under the Endangered Species Act of 1973.

Note: Chinook salmon found in Swift Creek/Sumas River watershed are considered to be members of the Fraser River Distinct Population Unit and are not listed under ESA.

ESSENTIAL FISH HABITAT: The Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996, requires all Federal agencies to consult with the NMFS on all actions, or proposed actions, permitted, funded, or undertaken by the agency, that may adversely affect Essential Fish Habitat (EFH). The U.S. Army Corps of Engineers (Corps) has determined that the proposed action will not adversely affect designated EFH for federally managed fisheries in Washington waters. No further EFH consultation is necessary.

CULTURAL RESOURCES: The District Engineer has reviewed the latest published version of the National Register of Historic Places, lists of properties determined eligible and other sources of information. There are no recorded historic properties within the permit area. The permit area has been so extensively modified by modern development that little likelihood exists for the proposed project to impinge upon an undisturbed historic property. The District Engineer invites responses to this public notice from Native American Nations or tribal governments; Federal, State, and local agencies; historical and archeological societies; and other parties likely to have knowledge of or concerns with historic properties in the area. This public notice initiates consultation under Section 106 of the National Historic Preservation Act (36 CFR 800.4[a][3]), with any Tribe that has information or concerns with historic properties in the proposed permit area.

PUBLIC HEARING: Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearings shall state, with particularity, the reasons for holding a public hearing.

EVALUATION: The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefits, which reasonably may be expected to accrue from the proposal, must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered, including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns,

wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people.

The U.S. Army Corps of Engineers is soliciting comments from the public; Native American Nations or tribal governments; Federal, State, and local agencies and officials; and other interested parties in order to consider and evaluate the impacts of this activity. Any comments received will be considered by the Corps to determine whether to issue, modify, condition or deny a permit for the work. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the activity.

The proposed discharge will be evaluated for compliance with guidelines promulgated by the Environmental Protection Agency under authority of Section 404(b)(1) of the Clean Water Act. These guidelines require an alternatives analysis for any proposed discharge of dredged or fill material into waters of the United States.

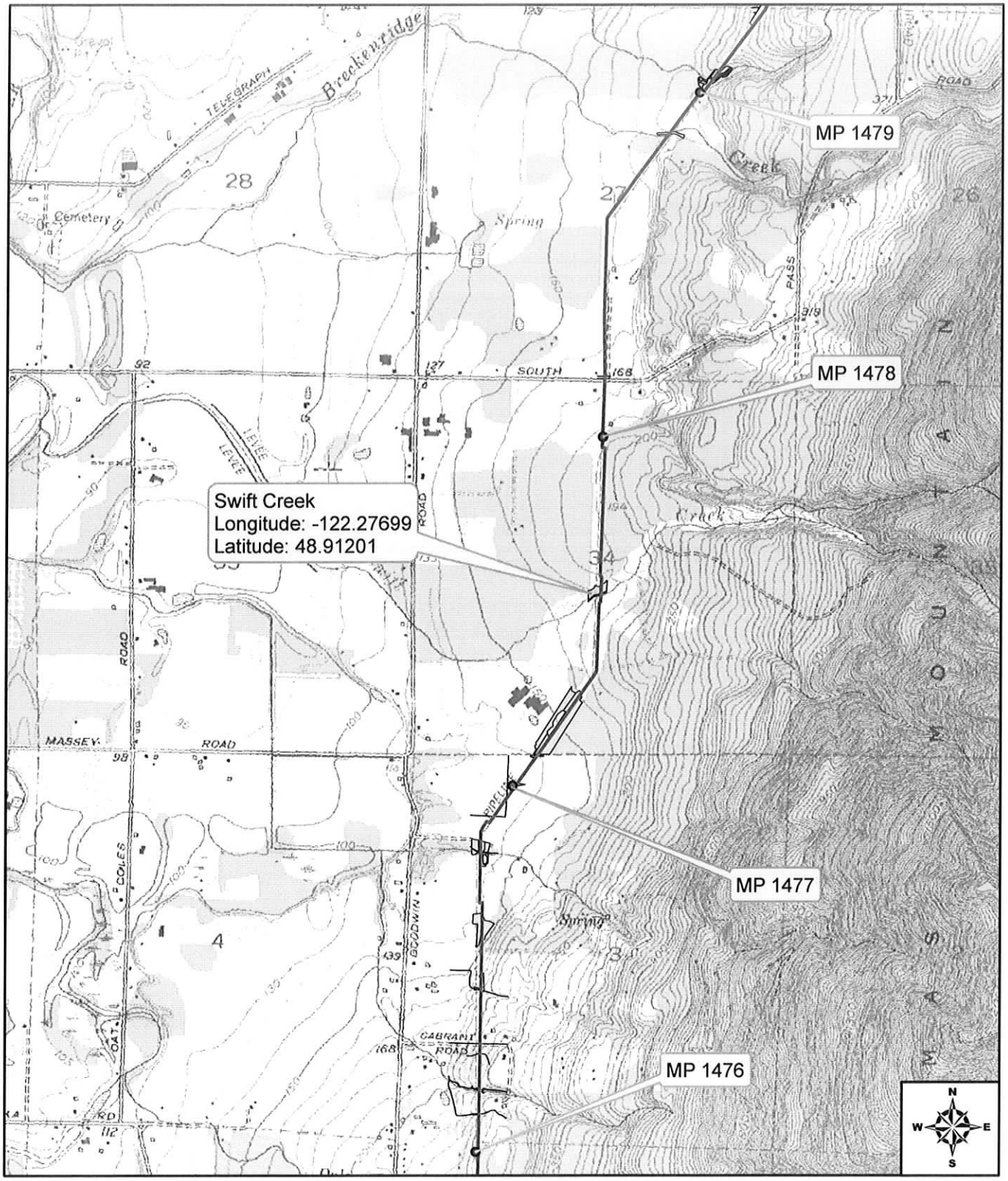
ADDITIONAL EVALUATION: The State of Washington is reviewing this work for consistency with the approved Washington Coastal Zone Management Program and for compliance with the applicable State and Federal water quality standards pursuant to Section 401 of the Clean Water Act).

This proposal is the subject of Shorelines Substantial Development Permit being processed by Whatcom County.

COMMENT AND REVIEW PERIOD: Conventional mail or e-mail comments on this public notice will be accepted and made part of the record and will be considered in determining whether it would be in the public interest to authorize this proposal. In order to be accepted, e-mail comments must originate from the author's e-mail account and must include on the subject line of the e-mail message the permit applicant's name and reference number as shown below. All e-mail comments should be sent to Olivia.H.Romano@usace.army.mil. Conventional mail comments should be sent U.S. Army Corps of Engineers, Regulatory Branch, Post Office Box 3755, Seattle, Washington, 98124-3755. Both conventional mail or e-mail comments must include the permit applicant's name and reference number, as shown below, and the commentor's name, address, and phone number. All comments whether conventional mail or e-mail must reach this office, no later than the expiration date of this public notice to ensure consideration. Please include the following name and reference number:

Northwest Pipeline Corporation 200600181

Encl
Drawings (9)



2.000 1.000 0 2.000 4.000 Feet

Scale = 1:24,000

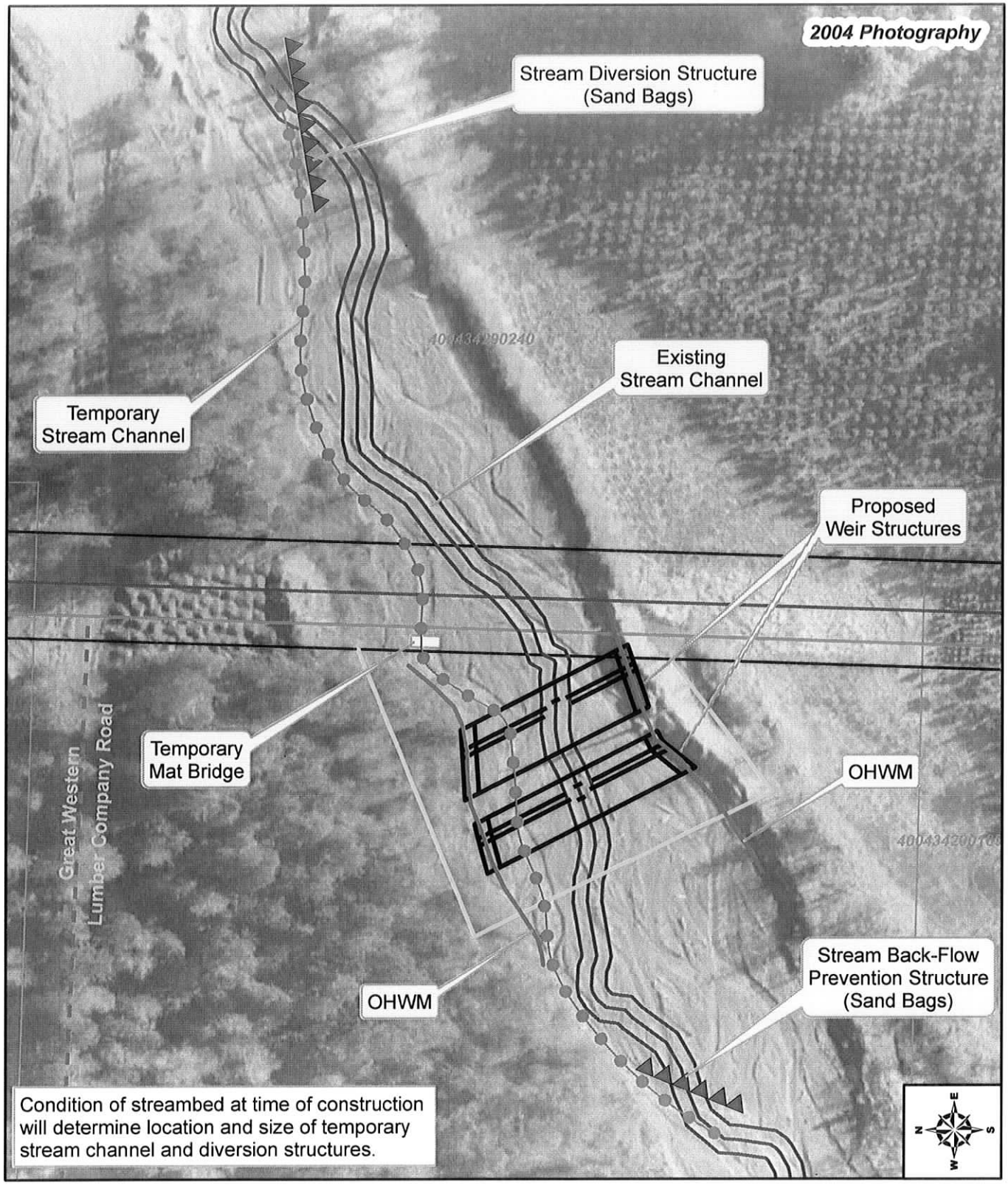
Proposed: Natural Gas Pipeline Maintenance **Reference: 2006-00181**

Purpose: Scour Repair / Pipeline Protection

App. by Northwest Pipeline Corporation

Sheet 1 of 9

Date: February 2006



Section 34, T 40 N, R 4 E - Whatcom County Washington

Legend

- 30-Inch Ignacio to Sumas Loop Pipeline
- 26-Inch Ignacio to Sumas Mainline
- Existing Permanent Easement
- Temporary Work Area
- Access Road

SCALE: 1 Inch = 100 Feet

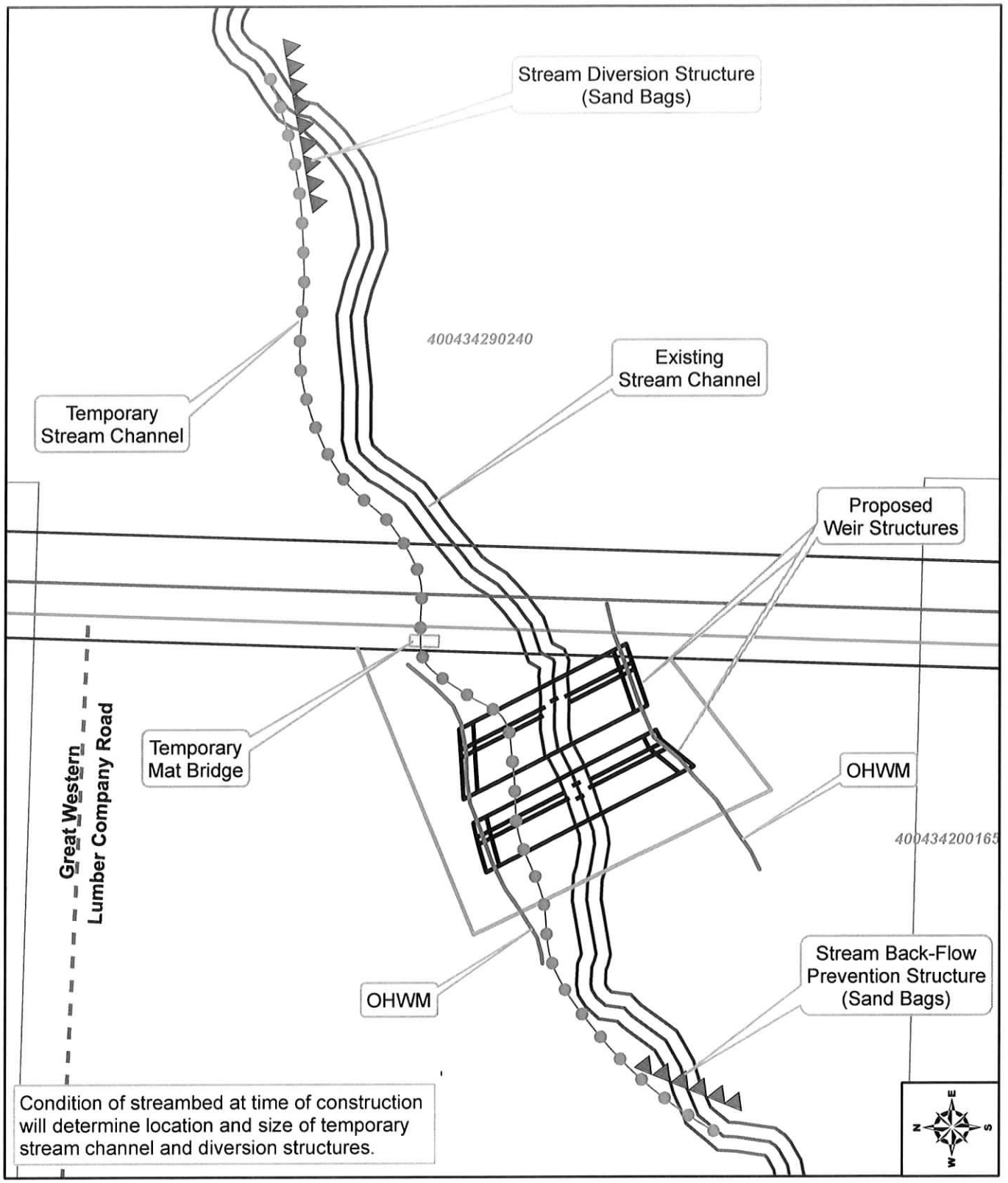
Proposed: Natural Gas Pipeline Maintenance **Reference: 2006-00181**

Purpose: Scour Repair / Pipeline Protection

App. by Northwest Pipeline Corporation

Sheet 2 of 9

Date: February 2006



Section 34, T 40 N, R 4 E - Whatcom County Washington

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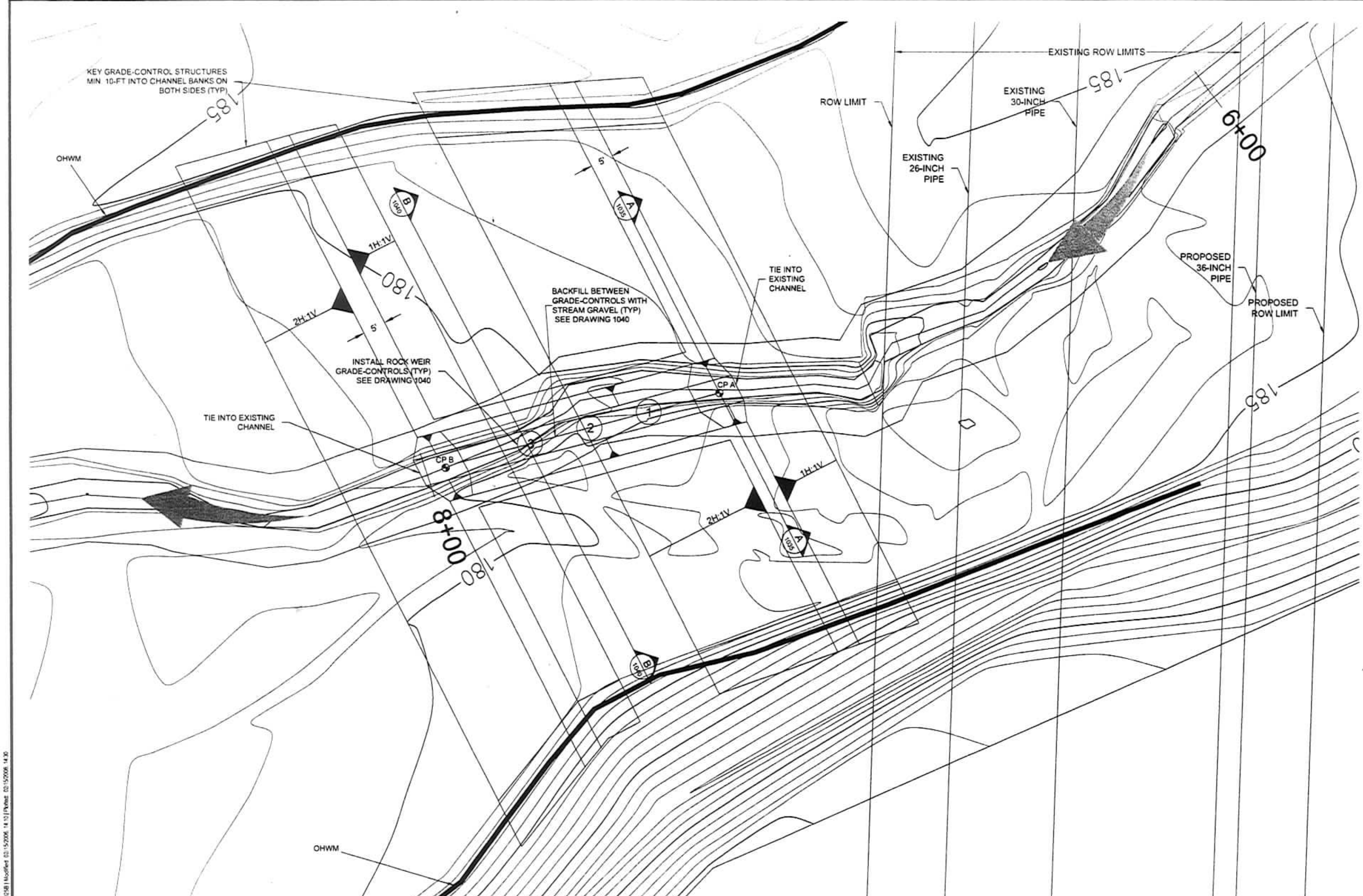
Proposed: Natural Gas Pipeline Maintenance **Reference: 2006-00181**

Purpose: Scour Repair / Pipeline Protection

App. by Northwest Pipeline Corporation

Sheet 3 of 9

Date: February 2006



NOTES:

1. FINAL CONFIGURATION TO BE DETERMINED IN THE FIELD AT TIME OF CONSTRUCTION BASED ON CONDITIONS ENCOUNTERED, OR AS DIRECTED BY THE ENGINEER.
2. ROW BOUNDARY AND PIPELINE LOCATIONS PROVIDED BY NWP.
3. SURVEY PROVIDED BY NWP (DECEMEBER 2005).

Proposed: Natural Gas Pipeline Maintenance
Purpose: Scour Repair / Pipeline Protection
App. by Northwest Pipeline Corporation

Reference: 2006-00181

Sheet 4 of 9

Date: February 2006.

Golder Associates

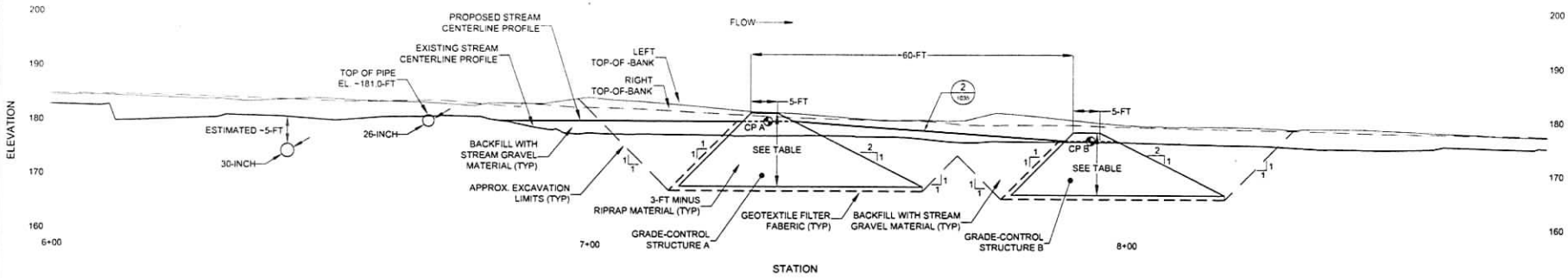
ANDREAS O. KAMMERECK — PROFESSIONAL ENGINEER

PROJECT: NWP/SWIFT CREEK/WA

TITLE: GRADE-CONTROL PLAN VIEW

PROJECT No.	053-1688x00		
FILE No.	0531688001C02		
REV. 0	SCALE	AS SHOWN	
DESIGN	ACM	1/10/06	
CADD	ACM	1/10/06	
CHECK	AOK	1/25/06	
REVIEW	MLB	1/27/06	

DRAWING 1025B

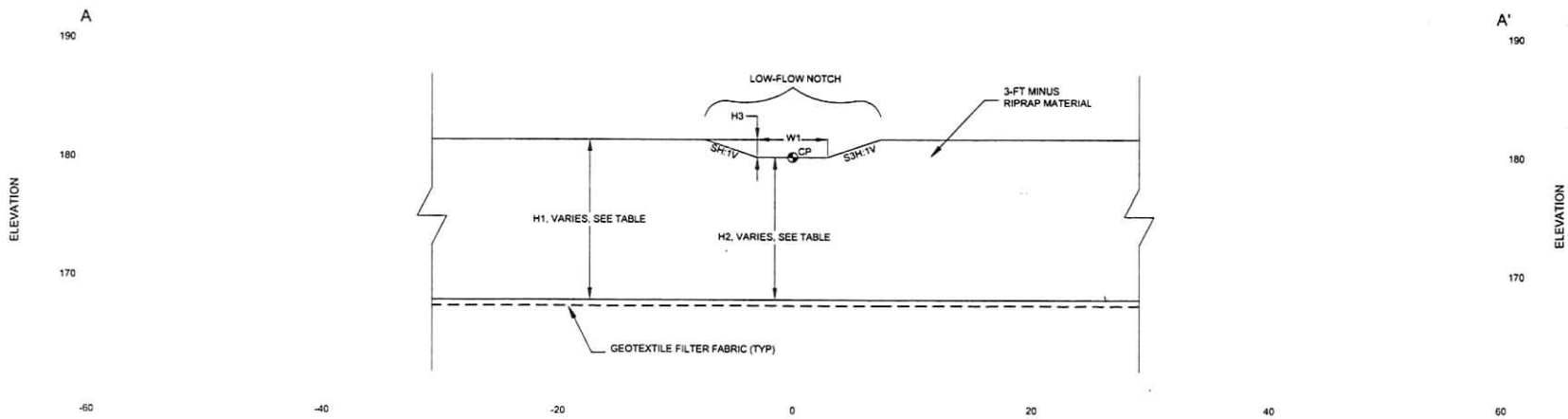


1 TYPICAL PROFILE THRU GRADE-CONTROL STRUCTURES (1030)

SCALE IN FEET

GRADE-CONTROL TABLE							
GRADE-CONTROL STRUCTURE/ CONTROL POINT	ELEVATION (FT)	CONTROL POINT COORDINATE (FT)	H1 (FT)	H2 (FT)	H3 (FT)	W1 (FT)	S
A	~180.0	1293175.75381 X, 700698.0111 Y	13.5	12	1.5	6	3
B	~176.5	1293116.5866 X, 700681.9692 Y	11.5	10	1.5	6	3

NOTE: CONTROL POINTS ARE REPORTED IN STATE PLANE COORDINATES, NAD83, WASHINGTON NORTH ZONE; ELEVATIONS ARE NAVD29
CONTROL POINTS ARE LOCATED IN THE CENTER OF THE GRADE-CONTROL LOW FLOW CHANNEL



A GRADE-CONTROL STRUCTURE SECTION (TYP) (1025)

SCALE IN FEET

NOTES:

1. FINAL CONFIGURATION TO BE DETERMINED IN THE FIELD AT TIME OF CONSTRUCTION BASED ON CONDITIONS ENCOUNTERED, OR AS DIRECTED BY THE ENGINEER.
2. PIPELINE LOCATION AND ELEVATION PROVDIED BY NWP.

Proposed: Natural Gas Pipeline Maintenance
Purpose: Scour Repair / Pipeline Protection
App. by Northwest Pipeline Corporation

Reference: 2006-00181

Sheet 5 of 9

Date: February 2006

Golder Associates

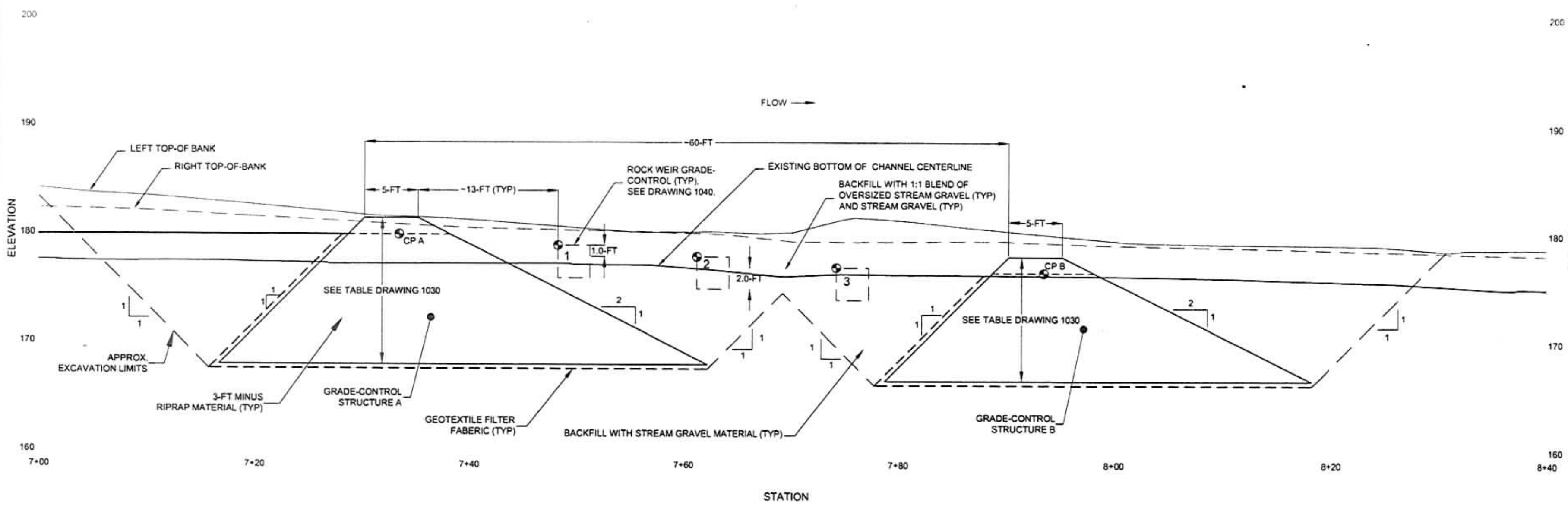
REV	DATE	DES	CHK	CADD	REVISION DESCRIPTION
	-	-	-	-	-

PROJECT: NWP/SWIFT CREEK/WA

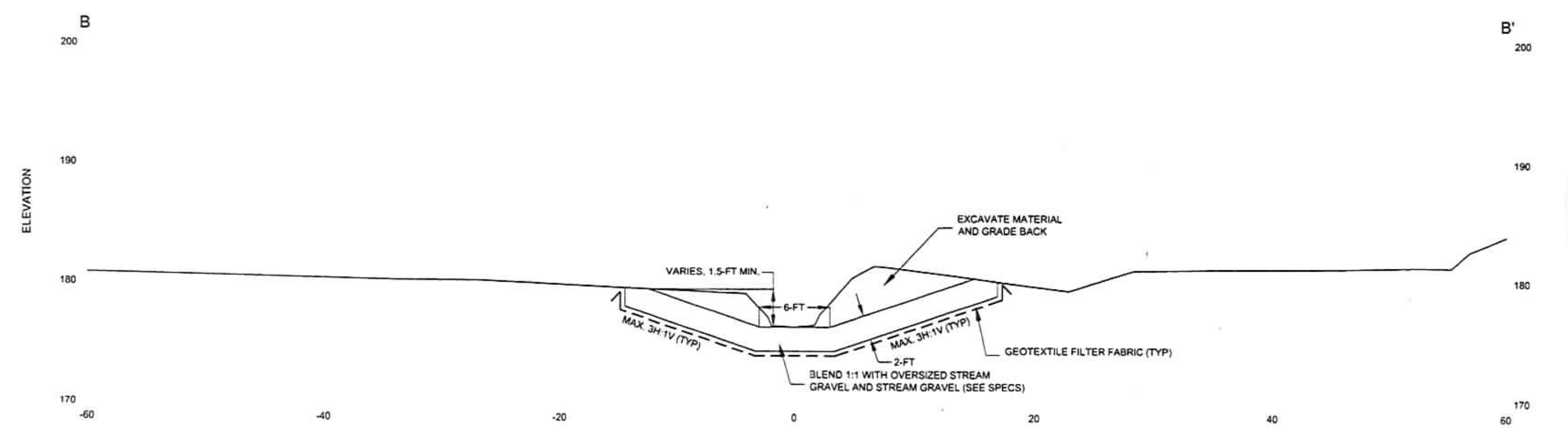
TITLE: TYPICAL GRADE-CONTROL SECTIONS

PROJECT No.	053-1688-001	
FILE No.	05316880001C01	
REV. 0	SCALE	AS SHOWN
DESIGN	ACM	1/10/06
CADD	ACM	1/10/06
CHECK	AGK	1/25/06
REVIEW	MLB	1/27/06

DRAWING 1030


ELEVATION
FLOW
60-FT
5-FT
13-FT (TYP)
5-FT
LEFT TOP-OF BANK
RIGHT TOP-OF-BANK
ROCK WEIR GRADE-CONTROL (TYP). SEE DRAWING 1040.
EXISTING BOTTOM OF CHANNEL CENTERLINE
BACKFILL WITH 1:1 BLEND OF OVERSIZED STREAM GRAVEL (TYP) AND STREAM GRAVEL (TYP)
CP A
CP B
1.0-FT
2.0-FT
SEE TABLE DRAWING 1030
SEE TABLE DRAWING 1030
APPROX. EXCAVATION LIMITS
3-FT MINUS RIPRAP MATERIAL (TYP)
GRADE-CONTROL STRUCTURE A
GEOTEXTILE FILTER FABERIC (TYP)
BACKFILL WITH STREAM GRAVEL MATERIAL (TYP)
GRADE-CONTROL STRUCTURE B
200
190
180
170
160
7+00
7+20
7+40
7+60
7+80
8+00
8+20
8+40
STATION

2 (1035) **STREAM CHANNEL PROFILE AND PROPOSED GRADE CONTROLS**
0 5 10 SCALE IN FEET



NOTES:

1. FINAL CONFIGURATION TO BE DETERMINED IN THE FIELD AT TIME OF CONSTRUCTION BASED ON CONDITIONS ENCOUNTERED, OR AS DIRECTED BY THE ENGINEER.

B (1035) **TYPICAL B-B' CHANNEL CROSS-SECTION**
0 5 10 SCALE IN FEET

Proposed: Natural Gas Pipeline Maintenance
Purpose: Scour Repair / Pipeline Protection
App. by Northwest Pipeline Corporation

Sheet 6 of 9

Reference: 2006-00181

Date: February 2006

Golder Associates

REV | DATE | DES | REVISION DESCRIPTION | CADD | CHK | RVW

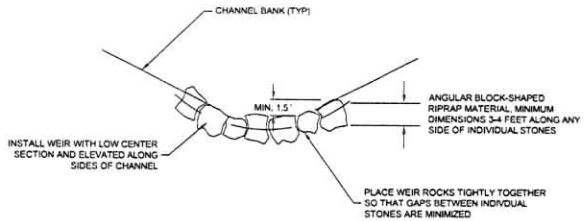
ANDREAS Q. KAMMERECK — PROFESSIONAL ENGINEER — EXPIRES

PROJECT: NWP/SWIFT CREEK/WA

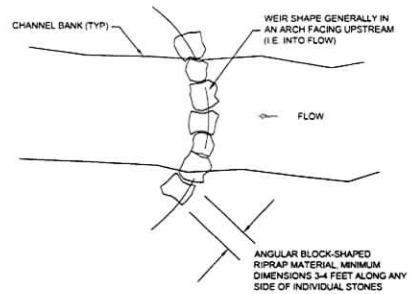
TITLE: LOW FLOW FISH PASSAGE CHANNEL SECTION AND PROFILE

PROJECT No.	053-1688.001	
FILE No.	0531688001C01	
REV. 0	SCALE	AS SHOWN
DESIGN	ACM	1/10/06
CADD	ACM	1/10/06
CHECK	AQK	1/25/06
REVIEW	MLB	1/27/06

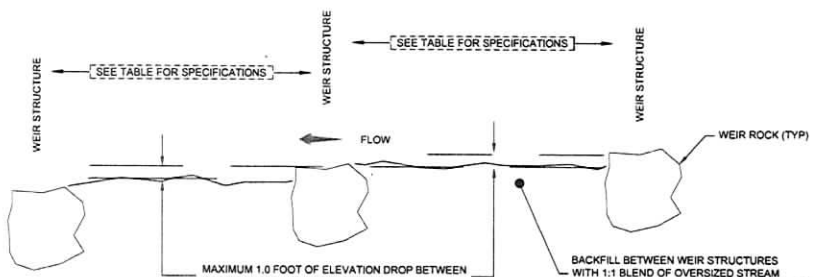
DRAWING 1035



3 / 1040 TYPICAL WEIR SECTION DETAIL
NOT TO SCALE



4 / 1040 TYPICAL WEIR SECTION DETAIL
NOT TO SCALE



5 / 1038 TYPICAL WEIR SECTION DETAIL
NOT TO SCALE

WEIR DIMENSIONS TABLE			
WEIR SRTUCTURE	TOP WEIR ELEVATION (FT)	CENTERLINE HORIZONTAL SPACING (FT)	CONTROL POINT COORDINATE* (FT)
1	179.0	~13	1293160.4318 X, 700693.9399 Y
2	178.0	~13	1293147.5810 X, 700690.5253 Y
3	177.0	~13	1293134.7303 X, 700687.1108 Y

* NOTE: CONTROL POINTS ARE REPORTED IN STATE PLANE COORDINATES, NAD83, WASHINGTON NORTH ZONE

NOTES:

1. FINAL CONFIGURATION TO BE DETERMINED IN THE FIELD AT TIME OF CONSTRUCTION BASED ON CONDITIONS ENCOUNTERED, OR AS DIRECTED BY THE ENGINEER.

Proposed: Natural Gas Pipeline Maintenance
Purpose: Scour Repair / Pipeline Protection
App. by Northwest Pipeline Corporation

Reference: 2006-00181

Date: February 2006

Golder Associates

GOLDER ASSOCIATES INC.
18300 NE UNION HILL ROAD, SUITE 200
REDMOND, WA 98052-3333
TEL: (425) 883-0777
FAX: (425) 882-5498

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW
0	-	-	-	-	-	-

ANDREAS G. KAMMERECK — REGISTERED PROFESSIONAL ENGINEER — EXPIRES

PROJECT: NWP/SWIFT CREEK/WA

TITLE: TYPICAL SMALL GRADE-CONTROL SECTIONS

PROJECT No.	053-1688+001	
FILE No.	053168800101	
REV. 0	SCALE	AS SHOWN
DESIGN	ACM	1/10/06
CADD	ACM	1/10/06
CHECK	AQK	1/25/06
REVIEW	MLB	1/27/06

DRAWING 1040

1.1 General

A. Refer to the attached design drawings titled: "NWP, Swift Creek ErosionProtection Design, January 2006" for the corresponding lines, grades, elevations, and configurations of the design.

B. For the purpose of these specifications, the term "engineer" shall mean a representative of Williams-Northwest Pipeline Company (NWP) or their designee for this project.

C. Final lines, grades, elevations, and configuration of the design may be modified by the engineer based on conditions encountered during construction or to address other un-foreseen changes in the design.

1.2 Construction Survey

A. The contractor will provide construction survey during implementation of the work in order to accurately determine the lines, grades, and elevations shown in the design drawings.

B. The engineer may request at any time the confirmation of lines, grades, and/or elevations of work-in-progress for the designs shown in the drawings.

C. The contractor will provide as-built surveys that accurately represent the completed work on a base drawing matching the elevation datum and coordinate system of the design drawings.

1.3 Materials

The following types of materials are addressed in the following sections of these specifications. Additional material specifications are included that may not be explicity called out in the attached design sheets, but may be required to address un-forseen situations and may be used as directed by the engineer:

A. Weir Rock: Consists of rock material for construction of in-channel grade-control structures, to the lines grades, elevations, and configuration as shown in the design drawings, or as directed by the Project Engineer.

B. Rock Riprap: Consists of rock riprap material for construction of bank armoring or grade-control structures to the lines, grades, elevations, and configuration as shown in the design drawings, or as directed by the Project Engineer.

C. Filter Fabric: Consists of a geotextile material placed under riprap bank armor areas to limit the transport of fine grained bedding soils through the riprap material, thereby minimizing the potential for piping failures, placed to the lines, grades, elevations, and configuration as shown in the design drawings, or as directed by the Project Engineer.

D. Stream Gravel Backfill/ Oversized Stream Gravel Backfill: Consists of the material used for backfilling around installed in the stream channel, around and/or upstream of installed grade-control structures, or other general filling placed to the lines, grades, elevations, and configuration as shown in the design drawings, or as directed by the Project Engineer.

E. Rock Pipeline Shield: Consists of the installation of a protective cover wrap around the pipeline(s) to the lines, grades, elevations, and configuration as shown in the design drawings, or as directed by the Project Engineer.

F. Erosion Control Blanket: Consists of the installation of erosion control coir fabric material and seeding with native seed mix of disturbed fill/grade slopes to the lines, grades, elevations, and configuration as shown in the design drawings., or as directed by the Project Engineer.

2.0 Material Specifications

The following specifications correspond to the attached design sheets.

2.1 Weir Rock Material

All weir rock material shall meet the following specifications:

A. The contractor shall supply all materials, equipment, and labor necessary to complete the installation of riprap materials as described in these specifications and shown in the design drawings.

B. Weir rock material shall be placed to the lines, grade, elevation, and configuration as shown in the attached design drawings, or as directed by the engineer.

C. Rock used shall be hard, durable, angular in shape, and resistant to weathering and to water action, free of overburden, spoil, shale, and organic material.

D. Rounded rock or boulders will no be accepted unless authorized by special provisions, or as directed by the engineer.

E. Shale and rock with seams are not acceptable.

F. The minimum unit weight of the rock shall be 165 lb/CF as computed by multiplying the specific gravity (bulk-saturated-surface-dry basis, AASHTO Test T 85) of the stone times 62.4 lb/CF.

G. Weir Rock material shall meet the gradation requirements outlined below:

Weir Rock Dimensions

Percent Passing	Size (Feet)
100	3-4
0	3

H. Weir Rock size shall be determined by calculating the average of the height, length and width as measured in three perpendicular directions on an individual rock.

I. Individual Weir Rocks shall be large, block-shaped pieces with angular edges. The breath and the thickness of individual stones used as riprap material shall be no less than one-half its length

J. The acceptability of the stone will be determined by service records (past performance on previous projects) and/or suitable tests. If tests are required, then suitable samples of the stone shall be taken in the presence of the engineer at least 30 working days in advance of the time when the placing of the rock material is expected to begin. The rock shall have a percentage of wear of not more than 50 percent at 500 revolutions as determined by AASHTO T 96.

K. The source (i.e. the quarry) from which the rock will be obtained shall be selected at least 30 working days in advance of the when the rock will be required for the work, or as directed by the engineer.

L. The approval of rock material from a particular location/layer within the quarry will not be construed as the approval of all rock material taken from the quarry.

M. Control of gradation shall be by visual inspection. The contractor shall provide two samples of rock at least one truck load (approximately 10-12 cubic yards) meeting the specified gradation. One sample will be kept at the construction site and may be a part of the finished riprap placed material. The other sample shall be provided at the quarry. These samples shall be used as a frequent reference for judging the gradation of the riprap supplied.

N. Any difference of opinion between the engineer and the contractor on riprap size/gradation shall be resolved by dumping and checking the gradation of a minimum of two random truck loads of riprap.

O. Mechanical equipment, a sorting site, and labor needed to assist in checking the gradation shall be provided by the contractor as a part of the overall project cost.

P. Areas where weir rocks will be placed shall be free of brush, trees, stumps, organics, or other objectionable materials and be dressed to a smooth surface. All soft, spongy, saturated materials shall be removed to the depth shown on the plans or as directed by the engineer and replaced with approved native material.

Q. The preferred approach for this is by placement of weir rock material with an excavator that has a bucket and an opposable thumb suitable for handling the specified rock sizes.

R. Placing of weir rock by dumping from trucks, or by dumping in chutes, or by similar methods likely to cause segregation of the riprap sizes will not be permitted.

S. The contractor shall be responsible for complying with all applicable regulations/permit authorizations relating to stockpiling and hauling of riprap materials.

T. Substitutions for specified materials shall be approved by the engineer prior to installation.

2.2 Rock Riprap Materials .

All rock riprap materials shall meet the following specifications:

A. The contractor shall supply all materials, equipment, and labor necessary to complete the installation of riprap materials as described in these specifications and shown in the design drawings.

B. Riprap material shall be placed to the lines, grade, elevation, and configuration as shown in the attached design drawings, or as directed by the engineer.

C. Rock used for riprap material shall be hard, durable, angular in shape, and resistant to weathering and to water action, free of overburden, spoil, shale, and organic material.

D. Rounded rock or boulders will no be accepted unless authorized by special provisions, or as directed by the engineer.

E. Shale and rock with seams are not acceptable.

F. The minimum unit weight of the rock shall be 165 lb/CF as computed by multiplying the specific gravity (bulk-saturated-surface-dry basis, AASHTO Test T 85) of the stone times 62.4 lb/CF.

G. Riprap material specified as 3-foot-minus shall meet the gradation requirements outlined below:

3-foot-minus Dimensions

Percent Passing	Size (Inches)
100	36
50	24
10	7

H. Riprap material specified as 2-foot-minus shall meet the gradation requirements outlined below:

2-foot-minus Dimensions

Percent Passing	Size (Inches)
100	24
50	12
10	4

I. Riprap material specified as 1-foot-minus shall meet the gradation requirements outlined below:

1-foot-minus Dimensions

Percent Passing	Size (Inches)
100	12
50	6
10	2

J. Crushed rock material specified as 3-inch-minus ("paver's mix") shall be used for finish travel roadway surfaces and bedding material for culvert placement, and shall meet the gradation requirements outlined below:

3-inch-minus Dimensions

Percent Passing	Size (Inches)
100	3
50	1.5
10	0.25

K. Riprap rock size shall be determined by calculating the average of the height, length, and width as measured in three perpendicular directions on an individual rock.

L. The breath and the thickness of individual stones used as riprap material shall be no less than one-third its length

M. The acceptability of the stone will be determined by service records (past performance on previous projects) and/or suitable tests. If tests are required, then suitable samples of the stone shall be taken in the presence of the engineer at least 30 working days in advance of the time when the placing of the rock material is expected to begin. The rock shall have a percentage of wear of not more than 50 percent at 500 revolutions as determined by AASHTO T 96.

N. The source (i.e. the quarry) from which the rock will be obtained shall be selected at least 30 working days in advance of the when the rock will be required for the work, or as directed by the engineer.

O. The approval of rock material from a particular location/layer within the quarry will not be construed as the approval of all rock material taken from the quarry.

P. Each load of riprap shall be reasonably well-graded from the smallest to the maximum size specified. Rocks smaller than the specified 10 percent size and spalls will not be permitted in an amount exceeding 10 percent by weight of each load delivered to the site.

Q. Control of gradation shall be by visual inspection. The contractor shall provide two samples of rock at least one truck load (approximately 10-12 cubic yards) meeting the specified gradation. One sample will be kept at the construction site and may be a part of the finished riprap placed material. The other sample shall be provided at the quarry. These samples shall be used as a frequent reference for judging the gradation of the riprap supplied.

R. Any difference of opinion between the engineer and the contractor on riprap size/gradation shall be resolved by dumping and checking the gradation of a minimum of two random truck loads of riprap.

S. Mechanical equipment, a sorting site, and labor needed to assist in checking the gradation shall be provided by the contractor as a part of the overall project cost.

T. Areas where riprap will be placed shall be free of brush, trees, stumps, organics, or other objectionable materials and be dressed to a smooth surface. All soft, spongy, saturated materials shall be removed to the depth shown on the plans or as directed by the engineer and replaced with approved native material.

U. Riprap shall be placed to its full course thickness in one operation and in such a manner as to avoid displacing the underlying materials.

V. Riprap will be placed in a manner which will produce a well-graded mass of riprap with the minimum practicable percentage of voids. The preferred approach for this is by placement of riprap material with an excavator that has a bucket and an opposable thumb suitable for handling the specified rock sizes.

W. Placing of riprap in layers, by dumping from trucks, or by dumping in chutes, or by similar methods likely to cause segregation of the riprap sizes will not be permitted.

X. All riprap material shall be placed and distributed so that there will be no large accumulations of either larger or smaller sizes of riprap.

Y. The contractor shall be responsible for complying with all applicable regulations/permit authorizations relating to stockpiling and hauling of riprap materials.

Z. Substitutions for specified materials shall be approved by the engineer prior to installation.

2.3 Filter Fabric Materials

A. The contractor shall supply all materials, equipment, and labor necessary to complete the installation of filter fabric materials as described in these specifications and shown in the design drawings.

B. When shown on the plans, a filter blanket or geotextile filter fabric shall be placed on the prepared slope or area to be covered with riprap.

C. Geotextile filter fabric material shall be a non-woven geotextile composed of polypropylene fibers which as formed into a stable network such that fibers retain their position. The geotextile shall be UV resistant. The minimum weight of the geotextile shall be minimum 10 oz/square yard. The recommended material is Mirafi 1100N (http://www.tcmirafi.com), or equivalent material.

D. Substitutions for specified materials shall be approved by the engineer prior to installation.

2.4 Stream Gravel Backfill

A. The contractor shall supply all materials, equipment, and labor necessary to complete the installation of gravel backfill materials as described in these specifications and shown in the design drawings.

B. Stream gravel backfill generally consists of the material used for backfilling around installed grade-control structures in the stream channel, or other general filling to the lines, grade, elevations, and configuration as shown in the attached design sheets.

C. Stream gravel backfill shall be installed to the lines, grades, and configurations as shown in the design drawings, or as directed by the engineer.

D. In general, good quality, well-graded pit-run material comprised of gravel or other rounded to sub-rounded material, is acceptable for use as stream gravels. All gravel material used in the project shall be as approved and specified by the Project Engineer. The follow table outlines a guideline grain size distribution for imported gravel material.

Grainsize Distribution Specification, Stream Gravels

U.S. Sieve Size	Percent Passing by Weight
2 ½ inch	100
2 inch	65-100
1 inch	50-85
¼ inch	30-50
No. 40	<16
No. 100	0

Grainsize Distribution Specification, OVERSIZED Stream Gravels

U.S. Sieve Size	Percent Passing by Weight
18 inch	100
16 inch	65-100
12 inch	50-85
8 inch	30-50
6 inch	<16
No. 40	0

E. Alternative materials are acceptable, upon review and approval by the Project Engineer.

Proposed: Natural Gas Pipeline Maintenance
Purpose: Scour Repair / Pipeline Protection
App. by Northwest Pipeline Corporation

Reference: 2006-00181

Sheet 8 of 9

Date: February 2006

Golder Associates

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

ANDREAS Q. KAMMERECK — STATE OF WASHINGTON — PROFESSIONAL ENGINEER — EXPIRES

PROJECT: NWP/SWIFT CREEK/WA

TITLE: SPECIFICATIONS

PROJECT No.	053-1688-001		
FILE No.	0531688001C01		
REV. 0	SCALE	AS SHOWN	
DESIGN	ACM	1/10/06	
CADD	ACM	1/10/06	
CHECK	AQK	1/25/06	
REVIEW	MLB	1/27/06	

DRAWING 1045

0531688001C01.dwg | Layout: 1045 | Modified: 02/15/2006, 14:03 | Plotted: 02/15/2006, 14:34

2.5 Rock Pipeline Shield Materials

A. The contractor shall supply all materials, equipment, and labor necessary to complete the installation of rock pipeline shields as described in these specifications and shown in the design drawings.

B. Contractor shall install "Tuff-N-Nuff" (refer to the following: <http://www.tuff-n-nuff.com/>) rock shield on pipeline(s) as shown in the design drawings or as directed by the engineer.

C. Substitutions for specified materials shall be approved by the engineer prior to installation.

2.6 Erosion Control Blanket Materials

A. The contractor shall supply all materials, equipment, and labor necessary to complete the installation of erosion control fabric described in these specifications and shown in the design drawings.

B. Erosion control fabric shall be installed over the finished fill/grade areas where native soils are exposed.

C. Exposed soil areas covered with erosion control blankets shall be reseeded with native seed mix called "Dixie National Forest" seed mix. The seed mix is included in the bid package, or will be provided by the engineer.

D. Erosion control fabric shall consist of woven coir blanket made from coir twines obtained from freshwater cured coconut husks. The blanket comes in varied widths and lengths, but is typically supplied in rolls.

E. The minimum weight of the coir fabric material shall be 28 oz/square yard, as determined by ASTM D 3776. Recommended manufacturer is Rolanka International, BioD-Mat 90 (www.rolanka.com), or equivalent.

F. Coir fabric shall be anchored to the slope using metal staples per the following spacing criteria, or as directed by the engineer. The dimension L refers to the vertically measured spacing between anchors, and the dimension W refers to the horizontally measured spacing:

Slope	Max. Dim. L (ft)	Max. Dim. W (ft)
>1H:1V	6	3
2H:1V	9	3
3H:1V	12	3
4H:1V	15	3

G. Anchors shall consist of staples made from minimum #2 rebar (i.e. min. 0.25 inch), bent around approximately a 3-inch radius curve to form two ends with a length of a minimum 18-inches.

H. Coir blankets shall be installed loosely along the surface of the ground to insure close contact with the ground surface.

I. Coir fabric typically is supplied in long rolls. Rolls should be installed down the slope (ie. the long dimension running with the slope) instead of across the slope.

J. The upslope end of the coir fabric at the top of the slope shall be anchored with staples in a trench approximately 12-inches deep and 12-inches wide, and the trench backfilled with the native soil material.

K. Where ends of the coir fabric rolls intersect along the slope, they shall overlap a minimum of 24-inches.

L. Substitutions for specified materials shall be approved by the engineer prior to installation.

Proposed: Natural Gas Pipeline Maintenance
Purpose: Scour Repair / Pipeline Protection
App. by Northwest Pipeline Corporation

Reference: 2006-00181

Sheet 9 of 9

Date: February 2006

Golder Associates

GOLDER ASSOCIATES INC.
18300 NE UNION HILL ROAD, SUITE 200
REDMOND, WA USA 98052-3333
TEL: (425) 883-0777
FAX: (425) 882-5498

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW
	-	-	-	-	-	-

ANDREAS Q. KAMMERBECK — REGISTERED PROFESSIONAL ENGINEER — STATE OF WASHINGTON — EXPIRES

PROJECT: NWP/SWIFT CREEK/WA

TITLE: SPECIFICATIONS

PROJECT No.	053-1688x001	
FILE No.	0531688001C01	
REV. 0	SCALE	AS SHOWN
DESIGN	ACM	1/10/06
CADD	ACM	1/10/06
CHECK	AQK	1/25/06
REVIEW	MLB	1/27/06

DRAWING 1050

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
P.O. Box 47600 • Olympia, Washington 98504-7600
(360) 407-6000 • TDD Only (Hearing Impaired) (360) 407-6006

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Notice of Application for
Water Quality Certification
and for
Certification of Consistency with the
Washington Coastal Zone Management Program

Date: March 17, 2006

Notice is herby given that a request has been filed with the Department of Ecology, pursuant to the requirements of Section 401 of the federal Clean Water Act of 1977 (PL 95-217), to certify that the project described in the U.S. Army Corps of Engineers Public Notice No. 200600181 will comply with the Sections 301, 302, 303, 306, and 307 of the Act, and with applicable provisions of State and Federal water pollution control laws.

Notice is herby given that a request has been filed with the Department of Ecology, pursuant to the requirements of Section 307© of the Federal Coastal Zone Management Act of 1972 (16 U.S.C. 1451), to certify that the above referenced project will comply with the Washington State Coastal Zone Management Program and that the project will be conducted in a manner consistent with that program.

Any person desiring to present views on the project pertaining to the project on either or both (1) compliance with water pollution control laws or (2) the project's compliance or consistency with the Washington State Coastal Zone Management Program may do so by providing written comments within 30 days of the above publication date to:

Federal Permit Coordinator
Department of Ecology
SEA Program
Post Office Box 47600
Olympia, Washington 98504-7600